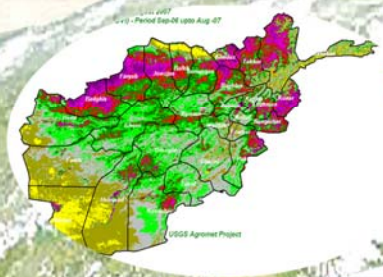
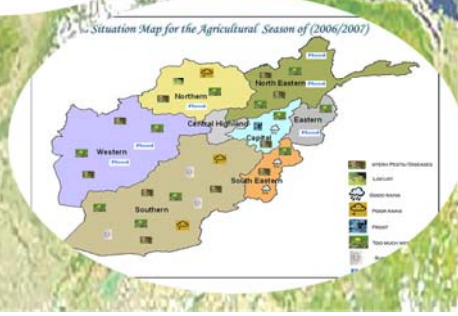
The Afghanistan Agrometeorological Seasonal Bulletin

Issue No. 5

S.Bulletin 2007 - 2008





Agromet Network

Table of contents

Inside This Issue

S/N	Topic	Page
1	**General Agricultural Information**	3
2	**Crop Condition**	4-9
3	**Synthesis situation 2007 2008**	10
4	**Meteorological information for evaluating agro meteorological risk for agricultural marketing systems.**	11
5	**Rainfall season 2007 - 2008**	12
6	**Length of Rainfall season by dekad 2007 - 2008**	13-15
7	**Recorded Distribution of Rainfall 2007 - 2008**	16-17
8	**Analysis of Recorded Rainfall by Region for the season 2007 - 2008**	18 - 23
9	**Total Snow Days 2007 - 2008**	24
10	**Afghanistan Snow Depth 2007 - 2008**	25
11	**Snowfall occurrence 2007-2008**	26-27
12	**Temperature and its effect 2007 - 2008**	28
13	**Frost Days recorded 2007 - 2008**	29
14	**Greenery of the year NDVI-2007 - 2008**	30

Afghanistan was amongst the first countries in the world to recognise the impact of the dramatic rise in global food price during 2008 and toward the end of the year the Government of Afghanistan (GoA) and the UN began working together to alleviate the worst impacts of the high below normal precipitation during the 2007 – 2008 winter resulted in a poor harvest for rain fed crops across the north and central western parts of Afghanistan particularly Badghis, Faryab, Saripul, Samangan, Badakhshan, and Ghor, Provinces where livelihoods are predominately rain fed agriculture and raising livestock.

As a result of this drought and high international food prices, conflict, and restrictions on labour migration, millions of people require humanitarian assistance.

Price of Staple:

Low precipitation and drought have hit rain-fed agricultural production in Afghanistan and will cause a "significant" reduction in the country's agricultural output in 2008, the UN Food and Agriculture Organization (FAO) has warned.

Afghanistan has about 1.5 million hectares of rain-fed agricultural land which accounted for 35 percent of the total 4.6 million tonnes of cereals (including wheat, beans, rice and maize) produced in 2007, the Ministry of Agriculture, Irrigation and Livestock (MAIL) reported.

Crop Condition					
Zone	**Province**	**District**	**Station**	**Wheat Condition**	**Adverse Factor**
Central	**Kabul**	Shakardara	Karizmir	Normal	Not existed
		Paghman	Paghman	Normal	Not existed
		Sarobi	Sarobi	Normal	Not existed
	Panjsher	Dara	Dara	Poor (below normal)	Lack of improved seed, Excessive Weeds and Shortage of Agricultural inputs as tractors threshers and etc
		Dashtak	Dashtak	Poor (below normal)	
	Parwan	Syagerd	Ghorband	Normal	Not existed
		Charikar	Charikar	Good (better than normal)	Not existed
	Kapisa	Mahmoodraqi	Mahmoodraqi	Poor (below normal)	Excessive weeds, Wild oats, wheat Rust and Smut and wheat cut Worms
	Wardak	Chak	Chak	Normal	Excessive weeds and Fatal frost damaged apple trees
		Jaghatoo	Jaghatoo	Normal	Above normal rainfall and Fatal frost damaged apple and Apricot trees, Worm attacked on Potatoes, Onion and Beans Areas and anthrax disease in animals
East Central	**Bamyan**	Central Bamyan	Bamyan	Normal	Not existed
		Yakawlang	Yakawlang	Normal	Not existed
		Panjab	Panjab	Normal	Not existed
Eastern	**Nangarhar**	Agam	Agam	Normal	Excessive Weeds
		Batikot	Ghaziabad	Normal	Excessive Weeds
		Jalalabad	Sheshembagh	Normal	Excessive Weeds
		Jalalabad	Farm Jadeed	Normal	Excessive Weeds
	Konar	Asmar	Asmar	Good (better than normal)	Not existed
		Asadabad	Asadabad	Good (better than normal)	Not existed
	Laghman	Mihtarlam	Mihtarlam	Good (better than normal)	Not existed
Northeast	**Takhar**	Bangi	Bangi	Poor (below normal)	Less amount of rainfall, Locust and Potato Bark beetles and Excessive weeds
		Taloqan	Taloqan	Poor (below normal)	
	Kunduz	Imam Sahib	Imam Sahib	Poor (below normal)	Excessive weeds, Wild oats, wheat Rust and Smut and wheat cut Worms and Less amount of rainfall
		Aqtipa	Aqtipa	Poor (below normal)	
		Chardara	Chardara	Poor (below normal)	
		Kunduz	Kunduz	Poor (below normal)	
	Baghlan	Baghlan Jadid	Pozaishan	Normal	Excessive weeds
	Badakhshan	Faizabad	Faizabad	Normal	Not existed

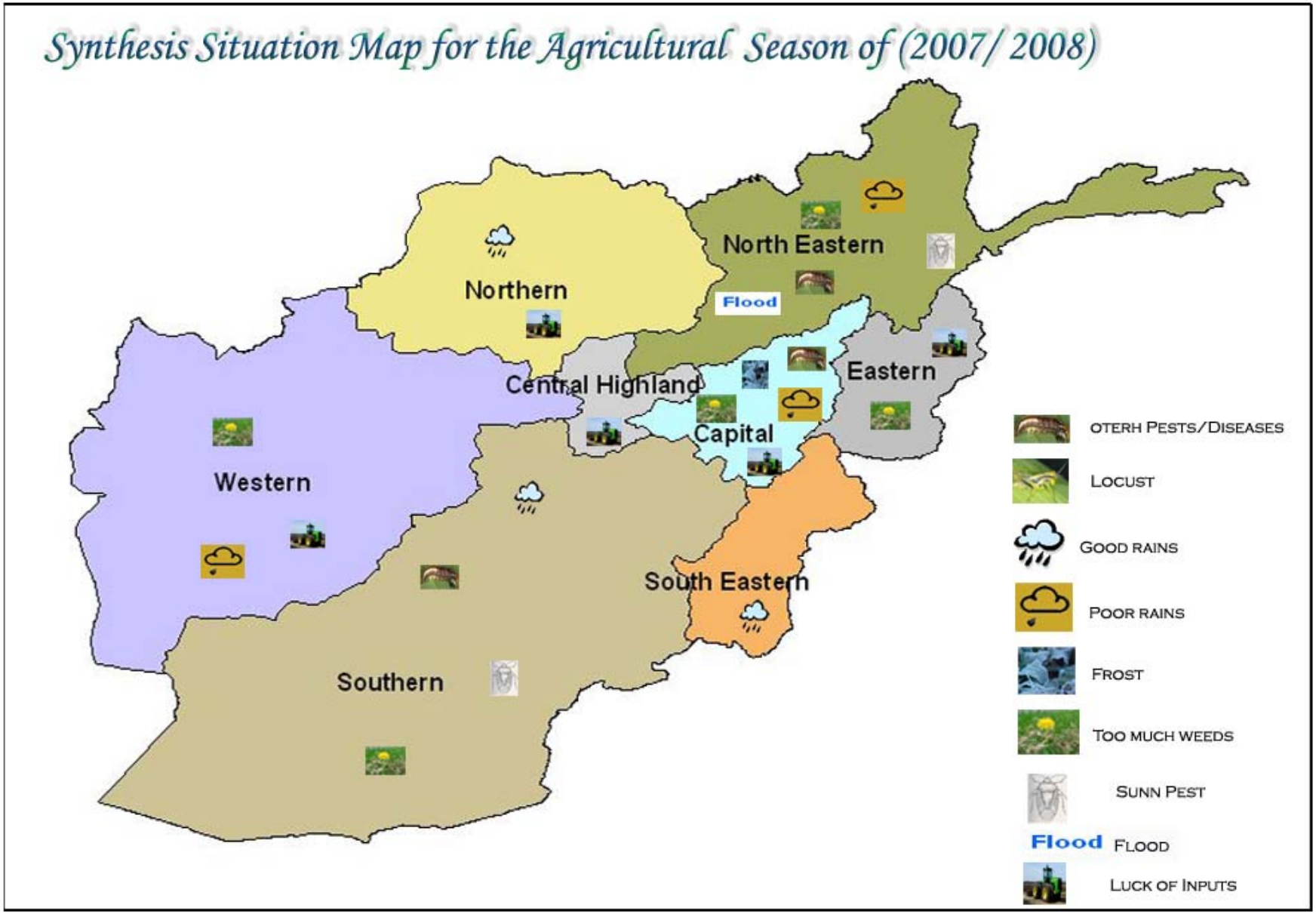
Crop Condition					
Zone	**Province**	**District**	**Station**	**Wheat Condition**	**Adverse Factor**
South Eastern	**Khost**	Khost	Khost	Good (better than normal)	Not existed
		Shimal	Shimal	Good (better than normal)	Not existed
		Ali Sher	Ali Sher	Good (better than normal)	Not existed
	Paktai	Gardiz	Rohani Baba	Good (better than normal)	Not existed
		Gardiz	Tera	Good (better than normal)	Not existed
	Paktika	Urgon	Urgon	Good (better than normal)	Not existed
		Sharana	Sharana	Normal	Not existed
		Kairkot	Kairkot	Normal	Not existed
	Ghazni	Muqur	Muqur	Poor (below normal)	Less amount of rainfall, drought and lack of water in spring and Gully (Kariz)
		Bande Sardi	Bande Sardi	Poor (below normal)	Less amount of rainfall, drought and lack of water in spring and Gully (Kariz)
Southern	**Nimroz**	Zaranj	Zaranj	Poor (below normal)	Due to the Less amount of rainfall, lack of water in Khashrod River, low water in Hilmand River 70% wheat yields are destroyed
	Kandahar	Kandahar	Kandahar	Normal	Not existed
	Zabul	Qalat	Qalat	Poor (below normal)	Excessive weeds, Wild oats, wheat Rust and Smut
	Urozgan	Tarikot	Tarikot	Normal	Not existed
	Hilmand	Nad Ali	Nad Ali	Poor (below normal)	Less amount of rainfall and sun pest in wheat Areas
		Greco	Greshk	Poor (below normal)	
		Nawa	Nawa	Poor (below normal)	
		Lashkargah	Bolan	Poor (below normal)	
North	**Balkh**	Dihdadi	Dihdadi	Poor (below normal)	Less amount of rainfall, Shortage of Agricultural inputs as tractors threshers and etc
		Nahrishahi	Nahrishahi	Poor (below normal)	
	Jawzjan	Sheberghan	Sheberghan	Poor (below normal)	100% rain fed wheat and 60% irrigated wheat are destroyed due to the lack of water and rainfall
	Saripul	Saripul	Saripul	Poor (below normal)	
		Sozmaqala	Sozmaqala	Poor (below normal)	
	Faryab	Maimana	Maimana	Poor (below normal)	90% rain fed wheat and 50% irrigated wheat are destroyed due to the lack of water and rainfall
	Samangan	Aibak	Aibak	Poor (below normal)	90% rain fed wheat and 70% irrigated wheat are destroyed due to the lack of water and rainfall
Western	**Badghis**	Qalainow	Qalainow	Poor (below normal)	90% rain fed wheat and 65% irrigated wheat are destroyed due to Locust assault from Turkmenistan border, lack of water and rainfall
		Muqur	Muqur	Poor (below normal)	
	Ghor	Chaghcharan	Chaghcharan	Poor (below normal)	Less amount of rainfall, Shortage of Agricultural inputs as tractors threshers and etc
	Hirat	Shindand	Shindand	Poor (below normal)	90% rain fed wheat and 50% irrigated wheat are destroyed due to Locust assault, lack of water and rainfall
		Hirat	Farm Urdokhan	Poor (below normal)	
	Farah	Farah	Farah	Normal	Not existed

Crop Condition					
Zone	**Province**	**District**	**Station**	**Maize Condition**	**Adverse Factor**
Central	**Kabul**	Shakardara	Karizmir		Due to less amount of rainfall and lack of water for irrigation Maize was not cultivated in this Province
		Paghman	Paghman		
		Sarobi	Sarobi	Normal	Shortage of Agricultural inputs
	Panjsher	Dara	Dara	Normal	Less amount of rainfall
		Dashtak	Dashtak	Normal	Less amount of rainfall
	Parwan	Syagerd	Ghorband	Good (better than normal)	Not existed
		Charikar	Charikar	Good (better than normal)	Not existed
	Kapisa	Mahmoodraqi	Mahmoodraqi	Normal	Shortage of Agricultural inputs
	Wardak	Chak	Chak		Due to less amount of rainfall and lack of water for irrigation Maize was not cultivated in these Provinces
		Jaghatoo	Jaghatoo		
East Central	**Bamyan**	Central Bamyan	Bamyan		
		Yakawlang	Yakawlang		
		Panjab	Panjab		
Eastern	**Nangarhar**	Agam	Agam	Normal	Shortage of Agricultural inputs
		Batikot	Ghaziabad	Normal	Shortage of Agricultural inputs
		Jalalabad	Sheshembagh	Normal	Shortage of Agricultural inputs
		Jalalabad	Farm Jadeed	Normal	Shortage of Agricultural inputs
	Konar	Asmar	Asmar	Good (better than normal)	Not existed
		Asadabad	Asadabad	Good (better than normal)	Not existed
	Laghman	Mihtarlam	Mihtarlam		the Farmers favorite crop for second season is rice
Northeast	**Takhar**	Bangi	Bangi	Normal	Not existed
		Taloqan	Taloqan	Poor (below normal)	Less amount of rainfall and water for irrigation and Drought
	Kunduz	Imam Sahib	Imam Sahib	Poor (below normal)	Less amount of rainfall
		Aqtipa	Aqtipa	Poor (below normal)	Less amount of rainfall
		Chardara	Chardara	Poor (below normal)	Less amount of rainfall
		Kunduz	Kunduz	Poor (below normal)	Less amount of rainfall
	Baghlan	Baghlan Jadid	Pozaishan	Poor (below normal)	Less amount of rainfall
	Badakhshan	Faizabad	Faizabad	Poor (below normal)	Less amount of rainfall and water for irrigation

Crop Condition					
Zone	**Province**	**District**	**Station**	**Maize Condition**	**Adverse Factor**
South Eastern	**Khost**	Khost	Khost	Poor (below normal)	Excessive Weeds
		Shimal	Shimal	Poor (below normal)	Excessive Weeds
		Ali Sher	Ali Sher	Poor (below normal)	Excessive Weeds
	Paktai	Gardiz	Rohani Baba	Good (better than normal)	Not existed
		Gardiz	Tera	Good (better than normal)	Not existed
	Paktika	Urgon	Urgon	Good (better than normal)	Not existed
		Sharana	Sharana		Due to less amount of rainfall and lack of water for irrigation Maize was not cultivated in these Provinces
		Khairkot	Khairkot		
	Ghazni	Muqur	Muqur		
		Bande Sardi	Bande Sardi	Normal	Less amount of rainfall
Southern	**Nimroz**	Zaranj	Zaranj		Due to less amount of rainfall and lack of water for irrigation Maize was not cultivated in these Provinces
	Kandahar	Kandahar	Kandahar		
	Zabul	Qalat	Qalat		
	Urozgan	Tarinkot	Tarinkot	Poor (below normal)	Less amount of rainfall
	Hilmand	Nad Ali	Nad Ali	Poor (below normal)	Less amount of rainfall
		Greshk	Greshk	Poor (below normal)	Less amount of rainfall
		Nawa	Nawa	Poor (below normal)	Less amount of rainfall
		Lashkargah	Bolan	Poor (below normal)	Less amount of rainfall
North	**Balkh**	Dihdadi	Dihdadi		Due to less amount of rainfall and lack of water for irrigation Maize was not cultivated in these Provinces
		Nahrishahi	Nahrishahi		
	Jawzjan	Sheberghan	Sheberghan		
	Saripul	Saripul	Saripul		
		Sozmaqala	Sozmaqala		
	Faryab	Maimana	Maimana	Poor (below normal)	Less amount of rainfall
	Samangan	Aibak	Aibak		Due to less amount of rainfall and lack of water for irrigation Maize was not cultivated in these Provinces
Western	**Badghis**	Qalainow	Qalainow		
		Muqur	Muqur		
	Ghor	Chaghcharan	Chaghcharan		
	Hirat	Shindand	Shindand		
		Hirat	Farm Urdokhan		
	Farah	Farah	Farah		

Crop Condition					
Zone	**Province**	**District**	**Station**	**Rice Condition**	**Adverse Factor**
Central	**Kabul**	Shakardara	Karizmir		Due to less amount of rainfall and lack of water for irrigation Rice was not cultivated in these Districts
		Paghman	Paghman		
		Sarobi	Sarobi	Normal	Not existed
	Panjsher	Dara	Dara		Rice cultivation is not common in this Province
		Dashtak	Dashtak		
	Parwan	Syagerd	Ghorband		Due to less amount of rainfall and lack of water for irrigation Rice were not cultivated in these Provinces
		Charikar	Charikar		
	Kapisa	Mahmoodraqi	Mahmoodraqi		
	Wardak	Chak	Chak		
		Jaghatoo	Jaghatoo		
East Central	**Bamyan**	Central Bamyan	Bamyan		Rice cultivation is not common in this Province
		Yakawlang	Yakawlang		
		Panjab	Panjab		
Eastern	**Nangarhar**	Agam	Agam	Normal	Shortage of Agricultural inputs
		Batikot	Ghaziabad	Normal	Excessive Weeds
		Jalalabad	Sheshembagh	Normal	Not existed
		Jalalabad	Farm Jadeed	Normal	Not existed
	Konar	Asmar	Asmar	Good (better than normal)	Not existed
		Asadabad	Asadabad	Good (better than normal)	Not existed
	Laghman	Mihtarlam	Mihtarlam	Good (better than normal)	Not existed
Northeast	**Takhar**	Bangi	Bangi	Normal	Not existed
		Taloqan	Taloqan	Poor (below normal)	Less amount of rainfall and less of water for irrigation and Drought
	Kunduz	Imam Sahib	Imam Sahib	Poor (below normal)	Less amount of rainfall
		Aqtipa	Aqtipa	Poor (below normal)	Less amount of rainfall and Excessive Weeds
		Chardara	Chardara	Poor (below normal)	Less amount of rainfall and Excessive Weeds
		Kunduz	Kunduz	Poor (below normal)	Less amount of rainfall and Excessive Weeds
	Baghlan	Baghlan Jadid	Pozaishan	Poor (below normal)	Less amount of rainfall and Excessive Weeds
	Badakhshan	Faizabad	Faizabad	Poor (below normal)	Less amount of rainfall and less amount of water for irrigation

Crop Condition					
Zone	**Province**	**District**	**Station**	**Rice Condition**	**Adverse Factor**
South Eastern	**Khost**	Khost	Khost	Poor (below normal)	Excessive Weeds
		Shimal	Shimal	Poor (below normal)	Excessive Weeds
		Ali Sher	Ali Sher	Poor (below normal)	Excessive Weeds
	Paktai	Gardiz	Rohani Baba	Good (better than normal)	Not existed
		Gardiz	Tera		Due to less amount of rainfall and lack of water for irrigation Rice was not cultivated in these Provinces
	Paktika	Urgon	Urgon		
		Sharana	Sharana		
		Khairkot	Khairkot		
	Ghazni	Muqur	Muqur		
		Bande Sardi	Bande Sardi		
Southern	**Nimroz**	Zaranj	Zaranj		Rice cultivation is not common in these Provinces
	Kandahar	Kandahar	Kandahar		
	Zabul	Qalat	Qalat		
	Urozgan	Tarinkot	Tarinkot	Poor (below normal)	Less amount of rainfall and less amount of water for irrigation
	Hilmand	Nad Ali	Nad Ali		Rice cultivation is not common in this Province
		Greshk	Greshk		
		Nawa	Nawa		
		Lashkargah	Bolan		
North	**Balkh**	Dihdadi	Dihdadi		Due to less amount of rainfall and lack of water for irrigation Rice was not cultivated in these Provinces
		Nahrishahi	Nahrishahi		
	Jawzjan	Sheberghan	Sheberghan		
	Saripul	Saripul	Saripul		
		Sozmaqala	Sozmaqala		
	Faryab	Maimana	Maimana		
	Samangan	Aibak	Aibak		
Western	**Badghis**	Qalainow	Qalainow		
		Muqur	Muqur		
	Ghor	Chaghcharan	Chaghcharan		
	Hirat	Shindand	Shindand		
		Hirat	Farm Urdokhan		
	Farah	Farah	Farah	Rice cultivation is not common in this Province	


Synthesis Situation Map for the Agricultural Season of (2007/ 2008)
North Eastern
Northern
Flood
Central Highland
Eastern
Capital
Western
South Eastern
Southern
OTERH PESTS/DISEASES
LOCUST
GOOD RAINS
POOR RAINS
FROST
TOO MUCH WEEDS
SUNN PEST
Flood FLOOD
LUCK OF INPUTS

Introduction

Agro meteorological risk and uncertainty permeate agricultural marketing system of every country. Important socioeconomic benefits can be achieved by designing business strategies to minimize the impact of these risks. In order to optimize business decisions relative to agrometeorological risk and uncertainty, accurate, timely, consistent, and widely available information is essential.

It is the recognition of the need for timely, accurate and widely available information which lead to the creation of Afghanistan agricultural situation. By combining sophisticated technology and scientific understanding of crop phenology, Agromet is able to provide early warning of emerging weather problems and potential crop shortfalls.

Afghanistan agricultural weather assessments

An assessment of winter wheat planting was conducted by FEWS NET between October 29 and November 7, 2008. The main objective of the assessment was to forecast. the outcome of the 2009 winter wheat harvest on the basis of agricultural input use, land preparation, and are planted in 2008.

Winter wheat planting is expected to be normal this year in all visited provinces, with the exception of Bamyan and Wardak, where winter wheat planting decreased by 20 to 40 percent.

High prices of improved seeds and chemical fertilizer are the biggest concerns of provincial department of agriculture officials and farmers. The prices of improved seeds and chemical fertilizer have doubled since 2007.

A simple yet effective technique for analyzing agricultural and meteorological data involves comparing past years for similar growing seasons or time periods. Such comparisons are typically achieved by graphing data from different years over the same time period or growing season.

Rainfall season (2007 – 2008)

Afghanistan is an arid to semi – arid country receiving very erratic rainfall over the year. Rainfall varies annually from 90 mm in Farah (west region) to 1024 mm in South Salang (Central region), occurs mostly in the winter months (December – end of February) as well as in April (during the tilling / flowering of winter wheat).

In higher elevations precipitation falls in the form of snow which is critical for river flow and irrigation during Spring and summer. Usually, March and April are the rainy months for western regions, Northern, Central Highlands, and Southern region. Indian monsoon usually brings rain to the Eastern region, Southeastern, and some parts of Northeastern and Capital regions during the months of June, July and August. Normally, in Afghanistan the rainfall season starts from September and continue up to August. For the MAIL / USGS Agromet project, the starting rainfall season is based on a 10 mm threshold. This means a 10 mm or more of precipitation is considered a start of the rainfall season.

Based on this approach the rainfall season (2007 – 2008) started normally early in the Southeastern region at 1st dekad of September 2007 and rainfall ended in the Eastern region and Southeastern regions in 3rd dekad of August 2008.

Rainfall season (2007– 2008)

Comparison of rainfall data for the season (2007 – 2008) from September 2007 up to August 2008 with last season (2006 - 2007) (chart 1) shows, significant decrease of rainfall for the season (2007-2008) compared to last season(2006–2007) across the country.

Distribution of rainfall was variable in deferent regions of the country during the rainfall season (2007-2008) , as map (1) shows most amount of rainfall occurred in the Eastern and some parts of the Southeastern regions during the rainfall season (2007 - 2008), in the Northeastern region experienced lower amount of rainfall and the Southern, Southwestern and Western regions lowest amount of precipitation has been recorded.

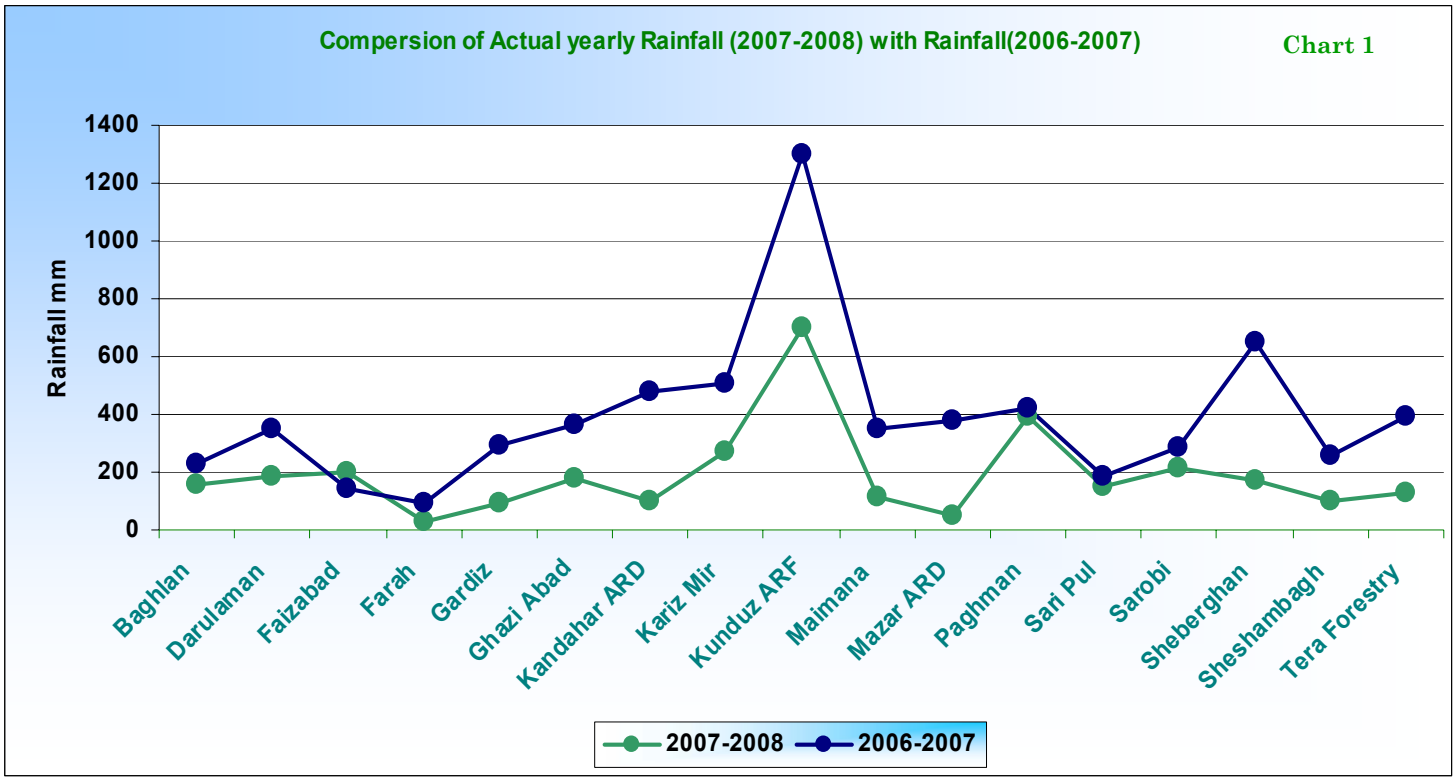
Dry spill:

The rainfall season (2007 – 2008) started normally early in the Southeastern region at 1st dekad of September 2007 and rainfall ended in the Eastern region and Southeastern regions in 3rd dekad of August 2008.

Most parts of the country received below normal precipitation from October 2007 up to May 2008 , dry conditions during this period had resulted in below normal snow pack meanwhile warmer than normal temperature have begun melting snow pack earlier then normal.. During January into February of bitter cold weather resulted in human fatalities and killed livestock. After the unusually cold weather eased it become warmer then normal and begun melting the snow pack early than normal.

Much of the country has received below normal precipitation (rain and snow) during the growing season (2007 - 2008) , generally the country experienced low amount of precipitation during the rainfall season (2007 - 2008) and experienced below normal rainy days and sow days.

The lack of inadequate precipitation (rain and snow) strongly stressed water recourses which had negative impact on cropping activities and reduced crop products in most parts of the country.



Rainfall pattern

The rainfall season (2007 – 2008) started in the Southeastern region at 1st dekad of September 2007 and rainfall ended in the Eastern region and Southeastern regions in 3rd dekad of August 2008.

The starting and ending rainfall season in different regions is as follows:

In the Capital region rainfall started at 1st dekad of December 2007 and rainfall ended at 3rd dekad of July 2008; for the Central Highlands rainfall started in the 3rd dekad of November 2006 and ended at the 1st dekad of May 2008, for the Eastern region rainfall started at the 1st dekad of September 2007 and ended at the 3rd dekad of August 2008 for the Northeastern region rainfall started at the 1st dekad of December 2007 and ended at the 3rd dekad of July 2008; for the Northern region rainfall started at the 1st dekad of December 2007 and ended at the 3rd dekad of May 2008, for Southern region, rainfall started at the 1st dekad of December 2007 and ended at the 3rd dekad of Aug 2008; for Southeastern region rainfall started at the 1st dekad of Sep 2007 and ended at the 3rd dekad of August 2008, and for the Western region rainfall started in the 3rd dekad of November 2007 and ended at the 1st dekad of May 2008.

Length of Rainfall season by dekad (2007-2008)

The length of rainfall season in different parts of the country is as follows: 20 dekads for the Capital 15 dekads for Central Highlands; 16 dekads for the Eastern region; 14 dekads for the Northeastern region; 12 dekads for the Northern regions, 7 dekads for Southern region; 23 dekads for the Southeastern region; and 13 dekads for the Western region.

Afghanistan season 2007 - 2008				
No	Name of Station	Starting Dekad	Ending Dekad	Rainfall season Length/ dekad
		Capital Region		
1	Badam bagh	1st dekad of Dec	2nd dekad of Apr	**17**
2	Chack	2nd dekad of Dec	3rd dekad of Apr	**9**
3	Charikar	2nd dekad of Dec	2nd dekad of Apr	**14**
4	Darulaman	1st dekad of Dec	3rd daked of July	**18**
5	Panjshir	3rd dekad of Nov	3rd dekad of May	**12**
6	Gul Khana	2nd dekad of Dec	3rd dekad of May	**16**
7	Jabulsaraj	3rd dekad of Nov	3rd dekad of May	**14**
8	Jaghatoo	3rd dekad of Nov	3rd dekad of July	**11**
9	kabul	1st dekad of Dec	3rd dekad of July	**15**
10	Kapisa Agri	1st dekad of Dec	2nd dekad of Apr	**13**
11	Kariz Mir	2nd dekad of Dec	2nd dekad of Apr	**14**
12	Logar	3rd dekad of Nov	3rd dekad of May	**12**
13	Paghman	2nd dekad of Nov	3rd dekad of June	**16**
14	Qargha	1st dekad of Noe	3rd dekad of June	**20**
15	Sarobi	2nd dekad of Nov	3rd dekad of June	**17**
16	Seya Gerd	3rd dekad of Dec	2nd dekad of April	**9**

Length of Rainfall season by dekad (2007-2008)

Afghanistan season 2007 - 2008

No	Name of Station	Starting Dekad	Ending Dekad	Rainfall season Length/ dekad
	Central Highlands			
	Bamyan	3rd dekad of Nov	3rd dekad of Apr	**6**
	Bamyan ARD	1st dekad of Jan	3rd dekad of May	**12**
	Panjab	1st dekad of Dec	3rd dekad of Apr	**5**
	Yakawlang	3rd dekad of Nov	1st dekad of May	**15**
	East			
	Agam	1st dekad of Sep	3rd dekad of Aug	**14**
	Asmar	2nd dekad of Sep	3rd dekad of Aug	**16**
	Farm Jadeed	3rd dekad of Sep	3rd dekad of Aug	**8**
	Ghazi Abad	3rd dekad of Sep	3rd dekad of Aug	**11**
	Jalalabad	2nd dekad of Sep	1St dekad of Aug	**11**
	Laghman	2nd dekad of Sep	1St dekad of Aug	**11**
	Mehtarlam	2nd dekad of Sep	3rd dekad of Aug	**15**
	Sheshambagh	1st dekad of Sep	3rd dekad of Aug	**7**
	Northeast			
	Chardara	1st dekad of Dec	3rd dekad of May	**12**
	Aqtepa	1st dekad of Dec	3rd dekad of May	**12**
	Baghlan	1st dekad of Dec	2nd dekad of April	**14**
	Baharak	1st dekad of Dec	3rd dekad of June	**14**
	Faizabad	1st dekad of Dec	3rd dekad of July	**12**
	Imam Sahib	1st dekad of Dec	3rddekad of May	**12**
	Kunduz ARF	1st dekad of Dec	3rd dekad of May	**13**
	Taluqan	1st dekad of Dec	3rd dekad of May	**11**
	Aibak	1st dekad of Dec	3rd dekad of May	**9**

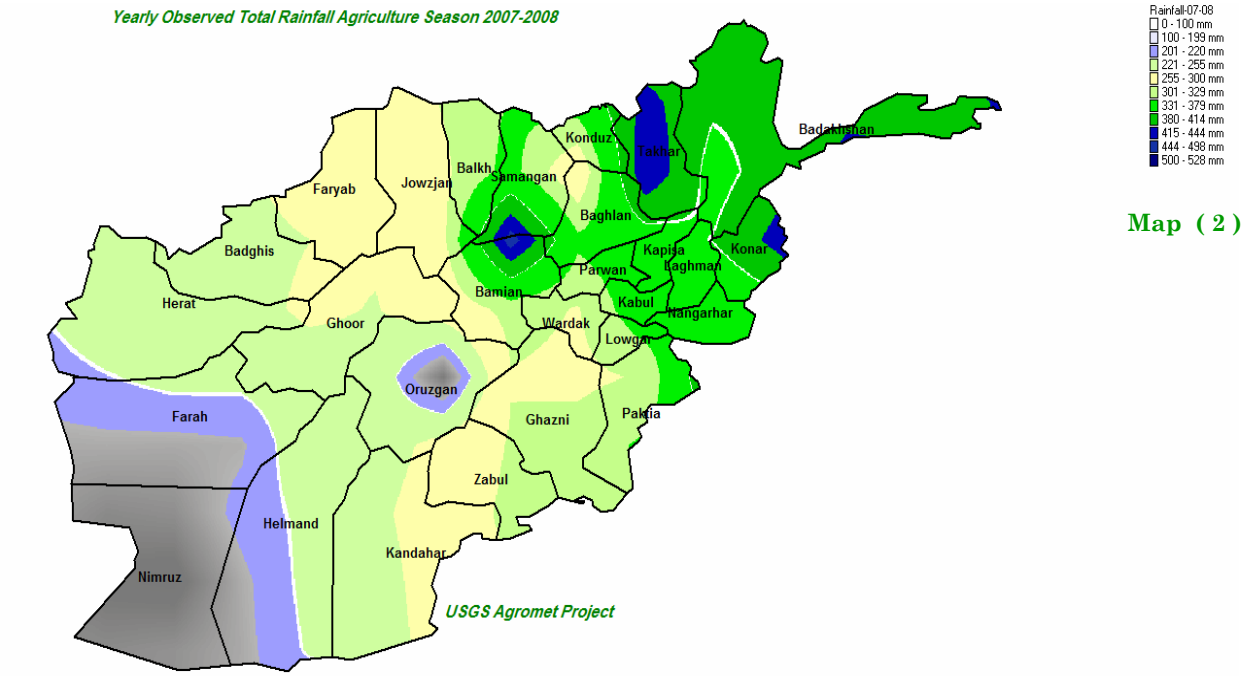
Length of Rainfall season by dekad (2007-2008)

Afghanistan season 2007 - 2008

No	Name of Station	Starting Dekad	Ending Dekad	Rainfall season Length/ dekad
		North		
38	Darzab	1st dekad of Dec	3rd dekad of Apr	**11**
39	Jawzjan ARD	2rd dekad of Nov	1st dekad of June	**12**
40	Kolor or khuram	1st dekad of Dec	3rd dekad of Apr	**7**
41	Maimana	1st dekad of Dec	2nd dekad of Apr	**8**
42	Mazar ARD	2rd dekad of Nov	3rd dekad of May	**14**
43	Mazarisharif	2rd dekad of Nov	1st dekad of May	**12**
44	Sarbagh	1st dekad of Dec	3rd dekad of May	**11**
45	Sari Pul	1st dekad of Dec	2nd dekad of Apr	**12**
46	Sheberghan	1st dekad of Dec	3rd dekad of May	**9**
47	Takhta Pul	1st dekad of Dec	1st dekad of May	**9**
		South		
48	Greshk	1st dekad of Dec	2nd dekad of Apr	**6**
49	Kandahar		2nd dekad of Apr	**6**
50	Lashkargah	1st dekad of Dec	3rd dekad of Apr	**6**
51	Nad Ali	1st dekad of Dec	1st dekad of Apr	**6**
52	Nawa Gorgin	1st dekad of Dec	1st dekad of Apr	**6**
53	Uruzgan ARD	1st dekad of Dec	2nd dekad of Apr	**6**
54	Zabul	1st dekad of Dec	2nd dekad of Apr	**7**
55	Zaranj	1st dekad of Dec	3rd dekad of Apr	**5**
56	Gardiz	1st dekad of Dec	1st dekad of May	**6**
57	Ghazni Met	3rd dekad of Nov	1st dekad of Aug	**14**
58	Sarday	3rd dekad of Nov	3rd dekad of Aug	**4**
		Southeast		
59	Khost	1st dekad of Sep	3rd dekad of Aug	**23**
60	Moqur	3rd dekad of Nov	3rd dekad of Aug	**3**
61	Rohani Baba	3rd dekad of Nov	1st dekad of Aug	**14**
62	Sharana	3rd dekad of Nov	3rd dekad of Aug	**11**
63	Tera Forestry	1st dekad of Dec	3rd dekad of Aug	**11**
		West		
64	Cheghcharan	1st dekad of Dec	1st dekad of May	**9**
65	Farah	1st dekad of Jan	2nd dekad of Apr	**3**
66	Hirat	3rddekad of Nov	3rd dekad of Apr	**10**
67	Moqur Badghis	1st dekad of Dec	1st dekad of April	**10**
68	Qala-e-naw	1st dekad of Dec	1st dekad of Apr	**13**
69	Shindand	1st dekad of Dec	1st dekad of April	**10**
70	Zenda jan	3rddekad of Nov	3rd dekad of Apr	**5**

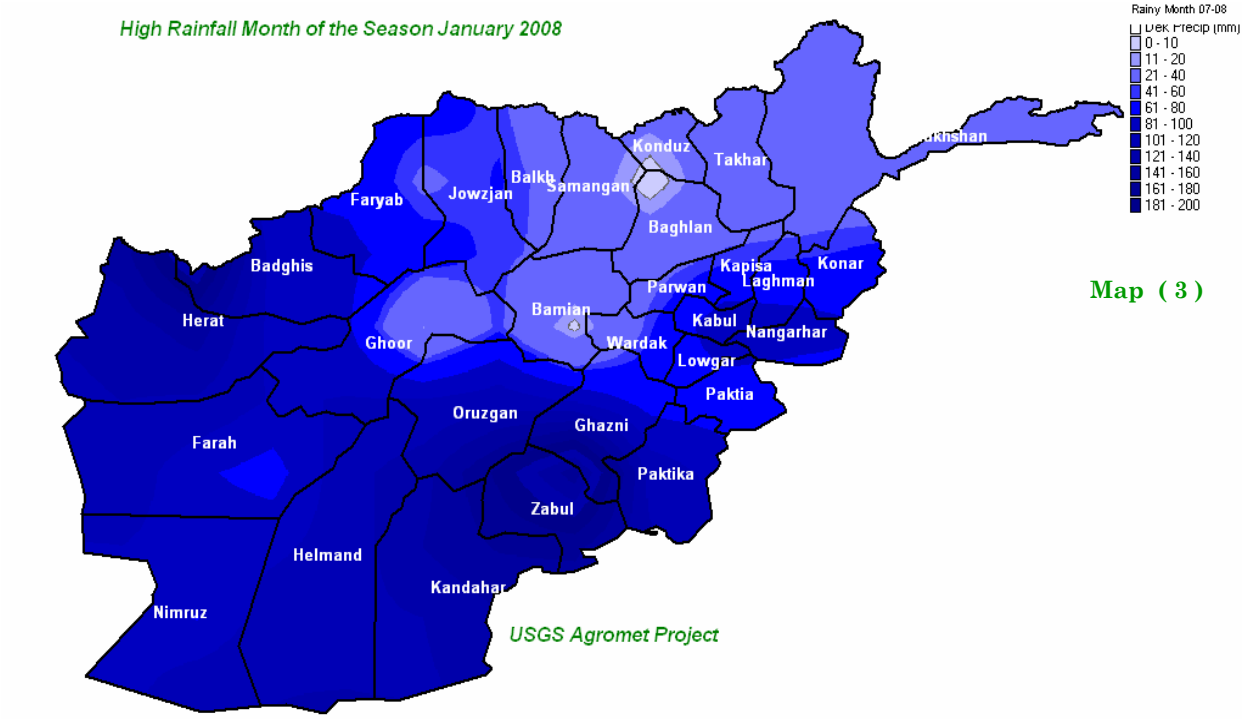
Recorded Distribution of Rainfall (2007-2008)

Map (2) shows the rainfall distribution for the rainfall season across the country and distribution of rainfall was variable in deferent regions. As map (2) shows most amount of rainfall occurred in the Northeastern region and some parts of the Eastern region during the rainfall season (2007 - 2008) and some parts of the Northern region (particularly Samangan province) also experienced good rainfall. The remaining regions of the country experienced less amount of rainfall during the rainfall season (2007 - 2008).



Map (2)

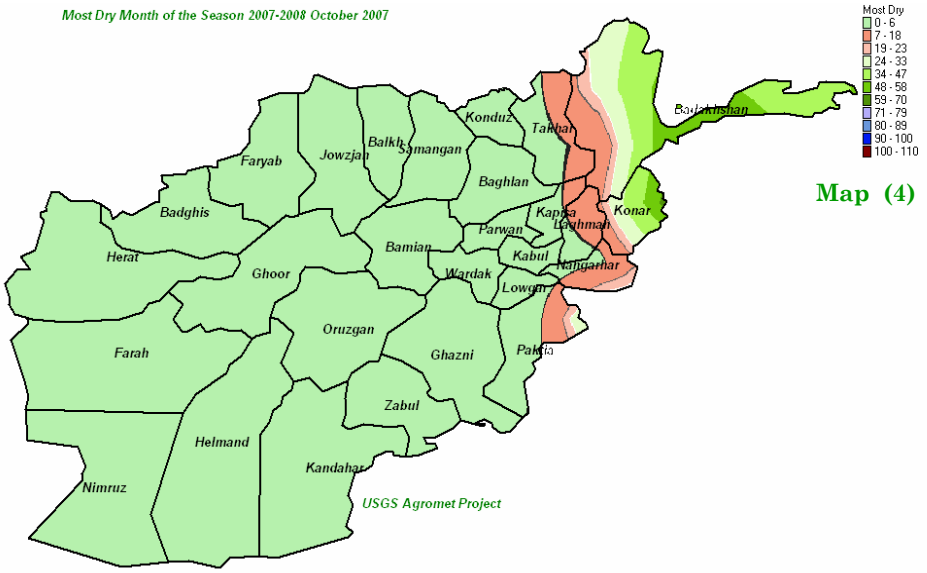
Map (3) shows the Maximum rainfall during the rainfall season (2007 – 2008) .As map (3) shows the month of January 2008 was very wet for the rainfall season (2007 - 2008) and the country experienced high amount of rainfall during this month, and most amount of rainfall occurred in the Eastern regions and some parts of the



Map (3)

Recorded Distribution of Rainfall (2007-2008)

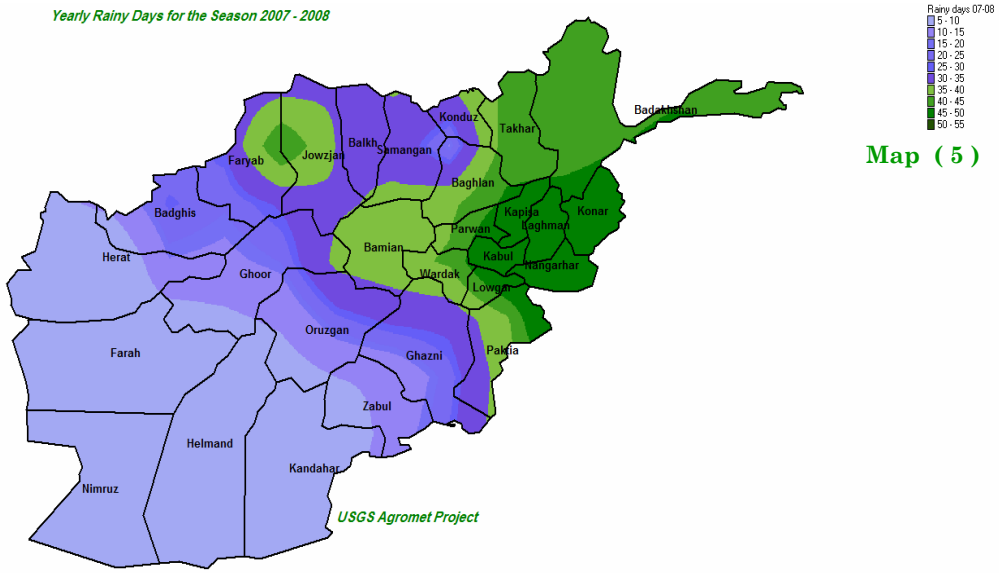
The month of October 2007 was very dry month for the rainfall season (2007 - 2008) which most parts of the country did not experienced rainfall except the Northeastern regions and some parts of the Eastern and some parts of Southeast regions some parts of the Eastern and some parts of Southern region experienced less amount of rainfall during the month of October 2008 for the agricultural season (2007 - 2008)



Map (4)

Yearly Rainy Days

For the rainfall season (2007— 2008) the yearly rainy days had a decrease compared to last season(2006 - 2007) and long term average across the country. The country experienced below normal rainy days during the rainfall season (2007 - 2008) which the highest value of rainy days has been recorded 53 rainy days in Ali Sher agricultural form (Southeastern region) and the lowest rainy days recorded 7 days in Zendajan located in the Western region. Figure (5) shows yearly rainy days during the rainfall season (2007 - 2008) across the country. As figure shows the Eastern region and the Southeastern region experienced most rainy days during the rainfall season (2007 - 2008) and the Southern, Southeastern and Western regions experienced lowest rainy days compared to other regions.



Map (5)

Analysis of Recorded Rainfall by Region for the rainfall season 2007-2008

Capital Region: Badam Bagh, Chack, Charikar, Darulaman, Panjshir, Gul Khana, Jabulsaraj, Jaghatoo, Kabul, Kapisa, Kariz Mir, Logar, Paghman, Qargha and Sarobi stations are located in this region. During the 2007 – 2008 season the average rainfall of this region is 195.8 mm. This region received below average rainfall during the rainfall season (2006– 2007) where most amount of rainfall occurred in the month of December, January and April. In this region the Maximum value (more than 15 mm) of rainfall by dekad in mm is as follow:

Stations	2007				2008							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Badambagh						46 1st dekad		43.3 1st dekad				
Chack			18 3rd dekad	54 1st dekad				40 1st dekad				
Chrikar				24 2nd dekad				49 1st dekad				
Darulaman					31 1st dekad	19 2nd dekad		35.5 1st dekad			17 3rd dekad	
Panjshir					21 1st dekad			75 2nd dekad	33 1st dekad			
Gul Khana				24.8 2nd dekad	29 1st dekad			58.5 1st dekad				
Jabulsaraj			25 2nd dekad	74 1st dekad	16 3rd dekad	18 1st dekad	96 1st dekad					
Jaghatoo			15 3rd dekad	36 2nd dekad	68 1st dekad			69.2 1st dekad	23 3rd dekad		26 3rd dekad	
Kabul				24.8 1st dekad				43.7 1st dekad				
Kapisa				16 1st dekad	42.2 1st dekad			89.5 1st dekad				
Kariz Mir				16 2nd dekad	85 1st dekad			59 1st dekad				
Logar			19 3rd dekad		40 1st dekad							
Paghman				20 3rd dekad	75 1st dekad	16 3rd dekad		87 1st dekad	18 3rd dekad			
Qargha					39 1st dekad			43.5 1st dekad				
Sarobi					47 1st dekad			43.3 1st dekad				

Analysis of Recorded Rainfall by Region for the rainfall season 2007-2008

Central Highlands: Bamyan, Bamyan ARD, Panhab and Yakawlang stations are located in this region . During the 2007 – 2008 season the average rainfall of this region is : 158.8 mm The Central Highlands region experienced less rainfall in the rainfall season (2006 – 2007), with the maximum rainfall recorded by dekad in mm is as follows:

Stations	2007				2008							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Bamyan								44.2mm 2nd dekad				
Bamyan ARD									44.7 2nd dekad			
Panjab						16 mm 2nd dekad			61 mm 1st dekad			
Yakawlang			22 mm 3rd dekad		24 mm 1st dekad				52 mm 2nd dekad	15 mm 1st dekad		

East Region: Agam, Asmar, Farm Jadeed, Ghazi Abad, Jalalabad, Laghman and Mehtarlam stations are located in this region During the 2007– 2008 season the average rainfall of this region is : 203.3 mm This region experienced significant rainfall during the rainfall season (2007– 2008) most amount of rainfall occurred during the months of January and April 08 and continued up to August 2008, the maximum rainfall which has been recorded by dekad in mm is as follow:

Stations	2006				2007							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Agam					52 mm 1st dekad			83 mm 1st dekad				
FormJaded	22 mm 1st dekad				25 mm 1st dekad	25 mm 1st dekad		47 mm 2nd dekad				
Ghazi Abad					35 1st dekad			35 mm 2nd dekad	15 mm 3rd dekad			24 mm 1st dekad
Jalabad	20mm2 nd dekad				23mm 1st dekad			44mm 2nd dekad				
Laghman					31mm 1st dekad	39mm 1st dekad	20mm 1st dekad	84.7mm 1st dekad				
Mehtarlam	25 mm 3rd dekad				33 mm 1st dekad	27 mm 1st dekad	26 mm 1st dekad	35mm 1st dekad				
Asmar	38 mm 3rd dekad	18 mm 1st dekad			79 mm 1st dekad	16 mm 1st dekad	43 mm 1st dekad	33 mm 1st dekad			35 mm 2nd dekad	41 mm 2nd dekad

Analysis of Recorded Rainfall by Region for the rainfall season 2007-2008

Northeast Region: Chardara, Aqtepa, Baghlan, Baharak, Faizabad, Imam Sahib, Kunduz ARF, Taluqan and Aibak stations are located in this region During the 2007 – 2008 season the average rainfall of this region is : 383.1 mm. The Northeastern region received lower amount of rainfall compared to last season (2006 - 2008) In this region, rainfall started September 2007 and continued up to May 2008. The maximum value of rainfall recorded in mm in different stations by dekad is listed below:

Stations	2007				2008							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Chardara	11 mm 1st dekad				137 mm 1st dekad	21mm 1st dekad	81mm 1st dekad	87 mm 1st dekad	32 mm 3rddekad			
Aqtepa				188 mm 1st dekad	151 mm 1st dekad	39 mm 1st dekad	136 mm 1st dekad	60 mm 2nd dekad	20 mm 3rd dekad			
Baghlan				18 mm 3rd dekad				30 mm 2nd dekad				
Baharak						15 mm 2nd dekad	30 mm 1st dekad					
Faizabad							15 mm 2nd dekad	30 mm 2nd dekad				
Imamsahib				131 mm 1st dekad	148 mm 1st dekad	58 mm 1st dekad		35 mm 1st dekad	37 mm 3rd dekad			
Kunduz				132 mm 1st dekad	137mm 1st dekad	29 mm 1st dekad	102 mm 1st dekad	79 mm 3rd dekad	45 mm 3rd dekad			
Taluqan				46 mm 1st dekad			33 mm 1st dekad	51 mm 1st dekad				
Aibak				19 mm 1st dekad			24 mm 1st dekad	28 mm 2nd dekad				

Analysis of Recorded Rainfall by Region for the rainfall season 2007-2008

North Region Darzab, Jawzjan, Kolor or khuram, Maimana, Mazar, Mazarisharif, Sarbagh, Sari Pul, Sheberghan and Takhta Pul stations are located in this region. During the 2007 – 2008 season the average rainfall of this region is 147.8 mm. This region received much rainfall in January and February 2008, during the rainfall season (2007 – 2008). The maximum rainfall has been recorded in mm and is shown below:

Stations	2007				2008							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Darzab				27mm 1st dekad								
Jawzjan ARD					31mm 1stdekad							
Koloror Khoram				65mm 1st dekad	90 mm 2nd dekad	65 mm 3rd dekad						
Maimana				16.4 mm 3rd dekad	16 mm 1st dekad	23 mm 2nd dekad						
Mazar ARD				17mm 1st dekad	22mm 1st dekad	23mm 2nd dekad						
Mazar –e – Sharif				24mm 1st dekad		31.4mm 2nd dekad						
Sarbagh				17 mm 1st dekad			18 mm 1st dekad	19 mm 2nd dekad	17 mm 3rd dekad			
Sari Pul				37 mm 1st dekad	24 mm 1st dekad	18 mm 2nd dekad		15 mm 2nd dekad				
Sheberghan				21 mm 1st dekad		31.5 mm 2nd dekad						
Takhtapul					19 mm 1st dekad		15 mm 3rd deakd					

Analysis of Recorded Rainfall by Region for the rainfall season 2007-2008

South region: Greshk, Kandahar, Lashkargah, Nad Ali. Nawa Gorgin, Uruzgan, Zabul, Zaranj, Gardiz, Ghazni Met and Sarday stations are located in this region. During the season (2007 - 2008) the average rainfall of this region is 155.1 mm. This region did nit experienced much rainfall during the rainfall season (2007 – 2008) compared to last season (2006 - 2008) most amount of rainfall recorded in January and February 2008. The maximum value of rainfall in mm by dekad in the region is as follow:

Stations	2007				2008							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Greshk					64 mm 1st dekad	90 mm 1st dekad	17 mm 1st dekad					
Kandahar					34 mm 2nd dekad			19 mm 2nd dekad				
Lashkargah					33.8 mm 1st dekad	46 mm 1st dekad						
Nad Ali					67 mm 1st dekad	76 mm 1st dekad						
Nawa Gorgin					71 mm 1st dekad	81 mm 1st dekad						
Urazgan ARD				21 mm 2nd dekad								
Zabul				36 mm 3rd dekad	132 mm 1st dekad	16 mm 1st dekad						
Zaranj				19 mm 2nd dekad	15.2 mm1st dekad							
Gardiz				20 mm 2nd dekad	30 mm 1st dekad							
Ghazni					32.3mm 1st dekad			46mm 1st dekad				
Sardy								18 mm 1st dekad				

Analysis of Recorded Rainfall by Region for the rainfall season 2007-2008

Southeast region: Khost, Moqur, Rohani Baba, Tera Forestry and Sharana stations are located in this region During the 2006 – 2007 season the average rainfall of this region is 288.8 mm. The Southeastern region experienced significant rainfall during the rainfall season (2007 – 2008) especially during the monsoon season. . The maximum rainfall recorded in this region in mm by dekad is as follow:

Stations	2007				2008							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Khost	17 mm 1st dekad				35 mm 1st dekad	20 mm 1st dekad		50 mm 1st dekad	24 mm 3rd dekad	23mm 3rd dekad	58 mm 2nd dekad	37 mm 1st dekad
Muqur					64mm 1st dekad							25mm 1st dekad
Rohani Baba						3 5 mm 1st dekad		67 mm 1st dekad				
Sharana					37 mm 2nd dekad	15 mm 1st dekad		156mm 1st dekad	22 mm 2nd dekad		34 mm 3rd dekad	
Tera Forestry				20 mm 2 nd dekad	30 mm 1st dekad							

Western Region: Cheghcharan, Farah, Hirat, Moqur Badghis, Qala-e-naw, Shindand and Zenda jan stations are located in this region Seasonal rainfall of this regions was 118.2 mm whch is lower compared to last season (2006—2008). The maximum rainfall recorded in this region in mm by dekad is as follow:

Stations	2007				2008							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Cheghcheran						18 mm 2nd dekad		61.5 mm 2nd dekad				
Farah						19 mm 1st dekad						
Herat					91mm 1st dekad		43mm 1st dekad					
Muqur Badghis				27 mm 1st dekad	24 mm 2nd dekad			16 mm 1st dekad				
Qala – e – Naw				27 mm 1st dekad	25 mm 2nd dekad			15.5 mm 1st dekad				
Shindand					23 mm 2nd dekad							

Total Snow Days 2007-2008:

The snow days were below normal during the growing season (2007 - 2008) around the country. The country experienced below normal snow days and significant decrease occurred on snowfall during the rainfall season (2007 - 2008) compared to last season (2006 - 2007). Snowfall started in November 2007 in the Capital region, Central – Highlands and some parts in the West and Southeast Regions and continued up to April 2008 for the Central Highlands, some parts of the Capital high elevations and the Northeastern mountainous areas. Highest snow days has been recorded in the Central Highlands (Yakawlang) where 21 snow days recorded while in the last season 44 snow days has been recorded above mention area. significant decrease on snowfall resulted decrease on snow extend ,snow depth and water recourses.

Snow Days of the Season 2007- 2008 — Table (2)

Name	Region	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total Snow Days
Badam bagh	Capital	0	0	0	0	5	4	0	0	0	0	0	0	**9**
Chack		0	0	0	0	2	0	0	0	0	0	0	0	**2**
Charikar		0	0	0	0	6	3	0	0	0	0	0	0	**9**
Dara Panjsheer		0	0	1	0	4	3	0	0	0	0	0	0	**8**
Darulaman		0	0	0	0	6	6	0	0	0	0	0	0	**12**
Dashtak		0	0	0	0	6	6	0	0	0	0	0	0	**17**
Gul Khana		0	0	0	0	6	4	0	0	0	0	0	0	**10**
Jaghatoo		0	0	0	2	5	2	0	0	0	0	0	0	**9**
Kapisa Agri		0	0	0	1	6	6	0	0	0	0	0	0	**13**
Kariz Mir		0	0	0	3	7	5	0	0	0	0	0	0	**15**
Paghman		0	0	0	4	7	7	0	0	0	0	0	0	**18**
Qargha		0	0	0	3	3	4	0	0	0	0	0	0	**10**
Bamyan ARD	Central Highlands	0	0	0	0	0	2	0	1	0	0	0	0	**3**
Panjab		0	0	0	0	8	5	0	0	0	0	0	0	**13**
Shebar		0	0	0	3	4	11	7	1	4	0	0	0	**19**
Yakawlang		0	0	1	7	5	5	2	1	0	0	0	0	**21**
Chardara	Norht east	0	0	0	1	5	3	0	0	0	0	0	0	**9**
Aaqtepa		0	0	0	1	5	3	0	0	0	0	0	0	**9**
Baharak		0	0	0	3	4	1	5	0	0	0	0	0	**13**
Faizabad		0	0	0	7	8	4	0	1	0	0	0	0	**19**
Kunduz ARD		0	0	0	0	5	3	0	0	0	0	0	0	**8**
Urgo		0	0	0	0	9	3	6	0	0	0	0	0	**18**
Aibak	North west	0	0	0	2	0	0	0	0	0	0	0	0	**2**
Dara-e-Soof		0	0	0	2	2	3	1	0	0	0	0	0	**8**
Darzab		0	0	0	4	0	3	0	0	0	0	0	0	**7**
Jawzjan ARD		0	0	0	5	0	2	0	0	0	0	0	0	**7**
Maimana		0	0	0	1	1	0	0	0	0	0	0	0	**2**
Sari Pul		0	0	0	1	7	6	0	0	0	0	0	0	**14**
Takhta Pul		0	0	0	1	5	3	0	0	0	0	0	0	**9**
Zabul	South	0	0	0	2	0	0	0	0	0	0	0	0	**2**
Moqur	South east	0	0	1	0	6	1	0	0	0	0	0	0	**8**
Rohani Baba		0	0	2	6	2	0	0	0	0	0	0	0	**10**
Sharana		0	0	0	0	7	2	0	0	0	0	0	0	**9**
Tera Forestry		0	0	0	5	0	3	0	0	0	0	0	0	**8**
Cheghcharan	West	0	0	1	2	5	6	1	0	0	0	0	0	**13**
Murghab		0	0	0	0	0	0	0	0	0	0	0	0	**0**
Qala-e-naw		0	0	0	2	4	3	0	0	0	0	0	0	**9**

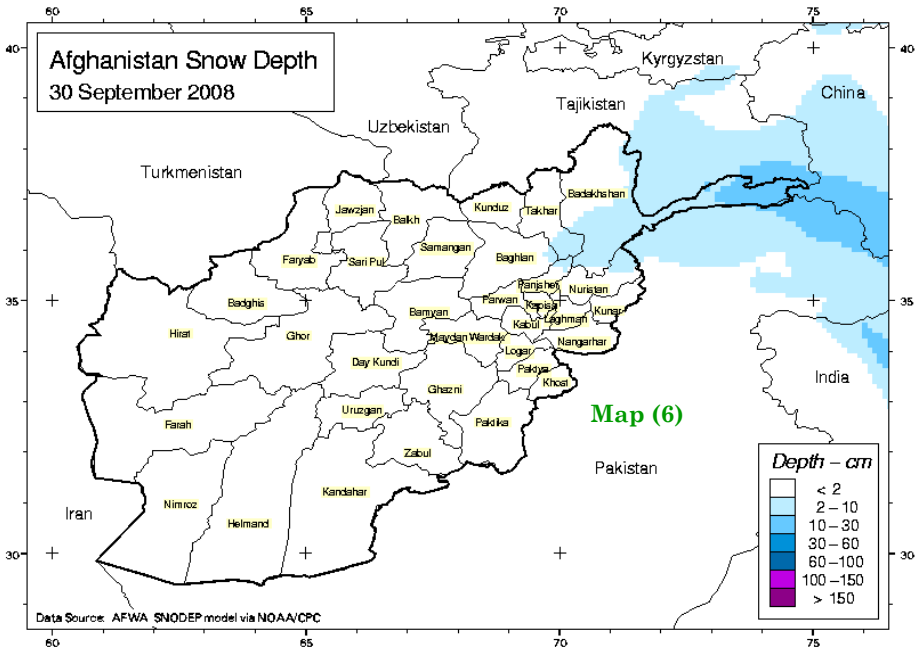
Data Source: Agromet Network, AMA, FAO, USGS

Afghanistan Snow Depth 2007-2008:

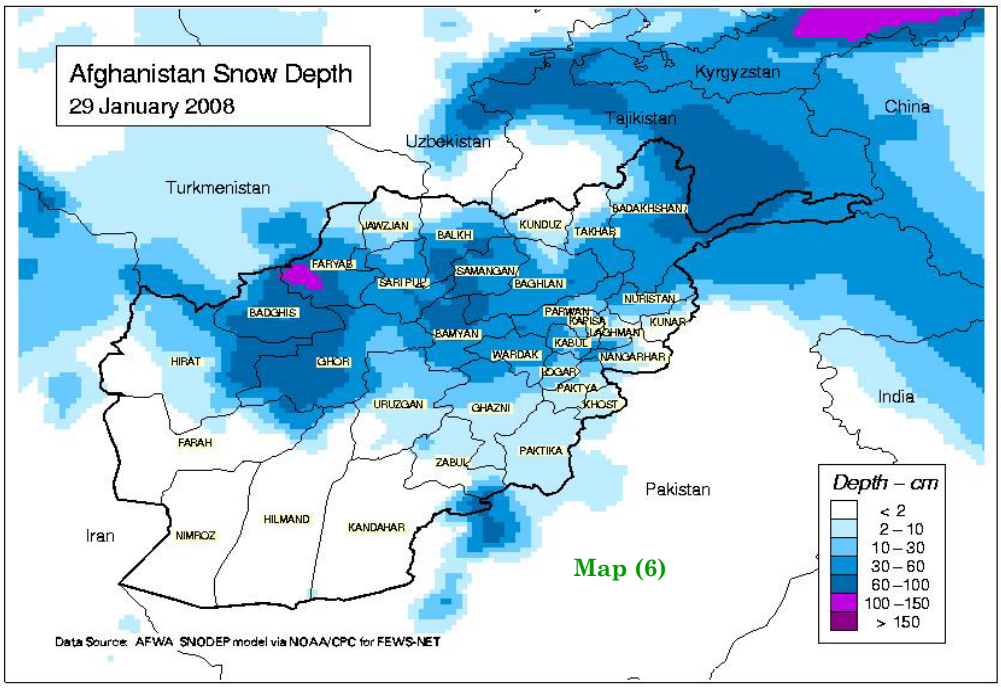
The snowfall started in the Central Highlands, Capital region and Southeastern regions on November 2007 and continued up to April 2008 for the Central Highlands and Northeastern regions.

In January 2008 significant snow occurred in most parts of the country particularly the Northwestern region experienced heavy snowfall which cased human fatalities , killed livestock and closed the roads and the snow depth and extent reached to normal. but from January to end of winter the country experienced below normal snow fall and due to higher temperature depleting snow pack earlier than normal the country.

Maps 6 shows the remaining snow pack in the extreme portion of the Northeastern region in the end of September 2008 where the depth recorded 10 to 30 cm.

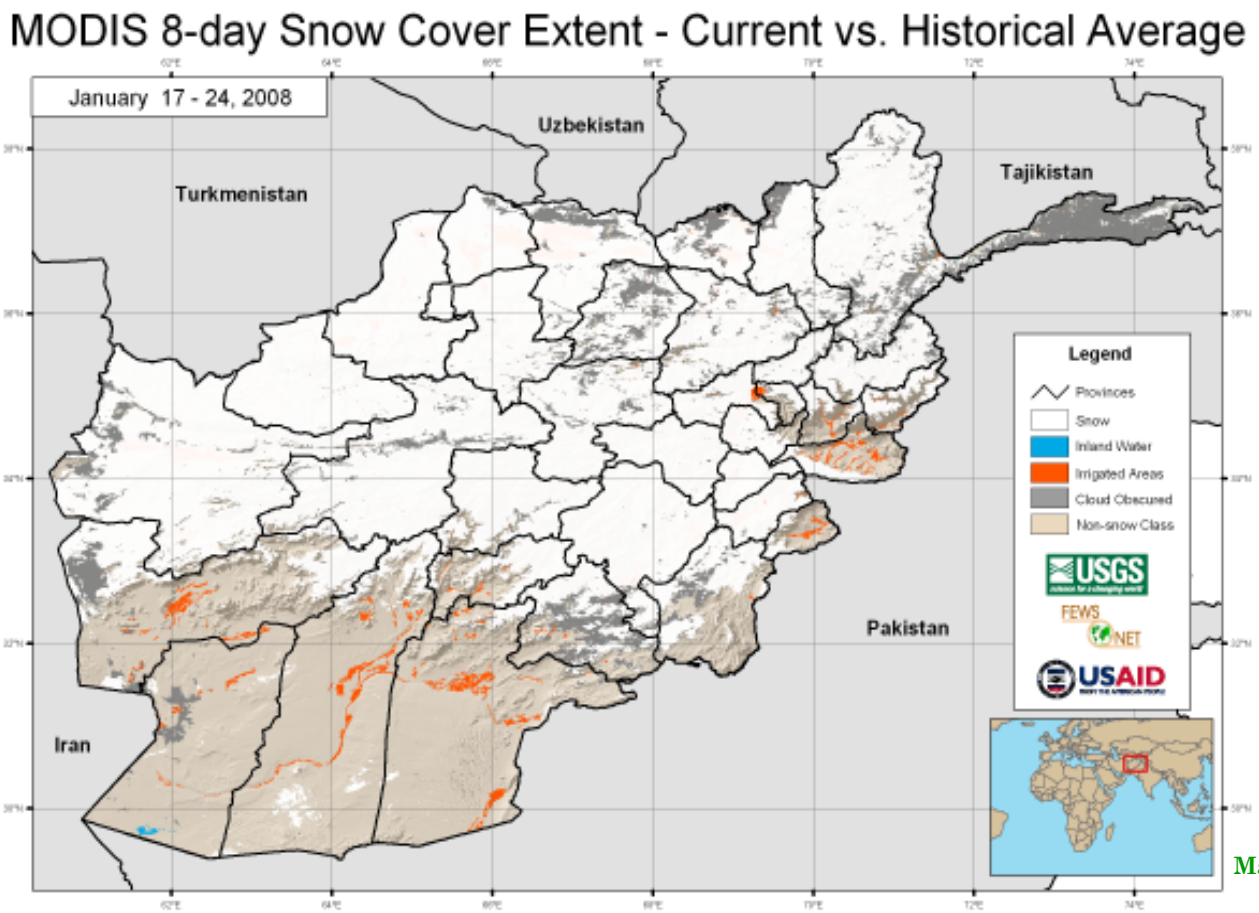


Map (6)

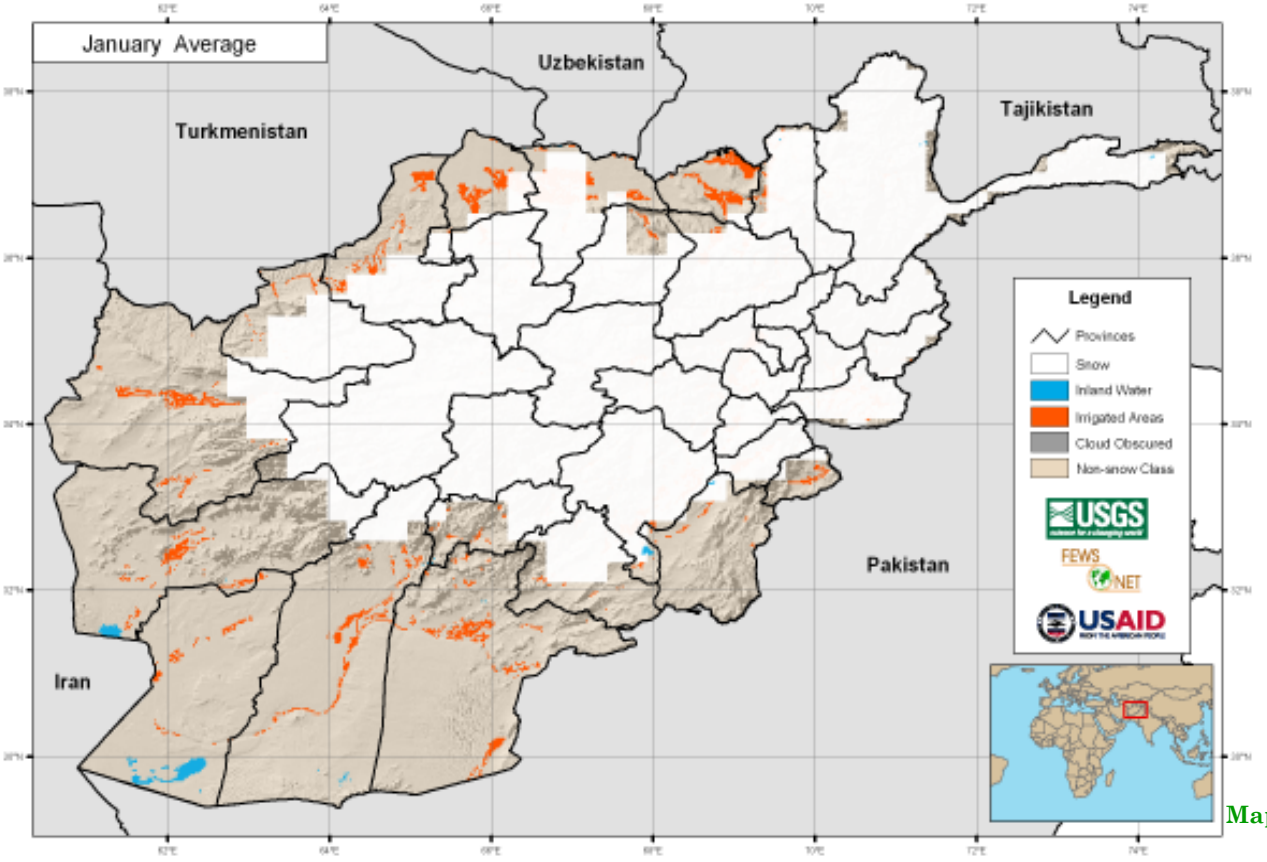


Map (6)

Snowfall occurrence 2007-2008:

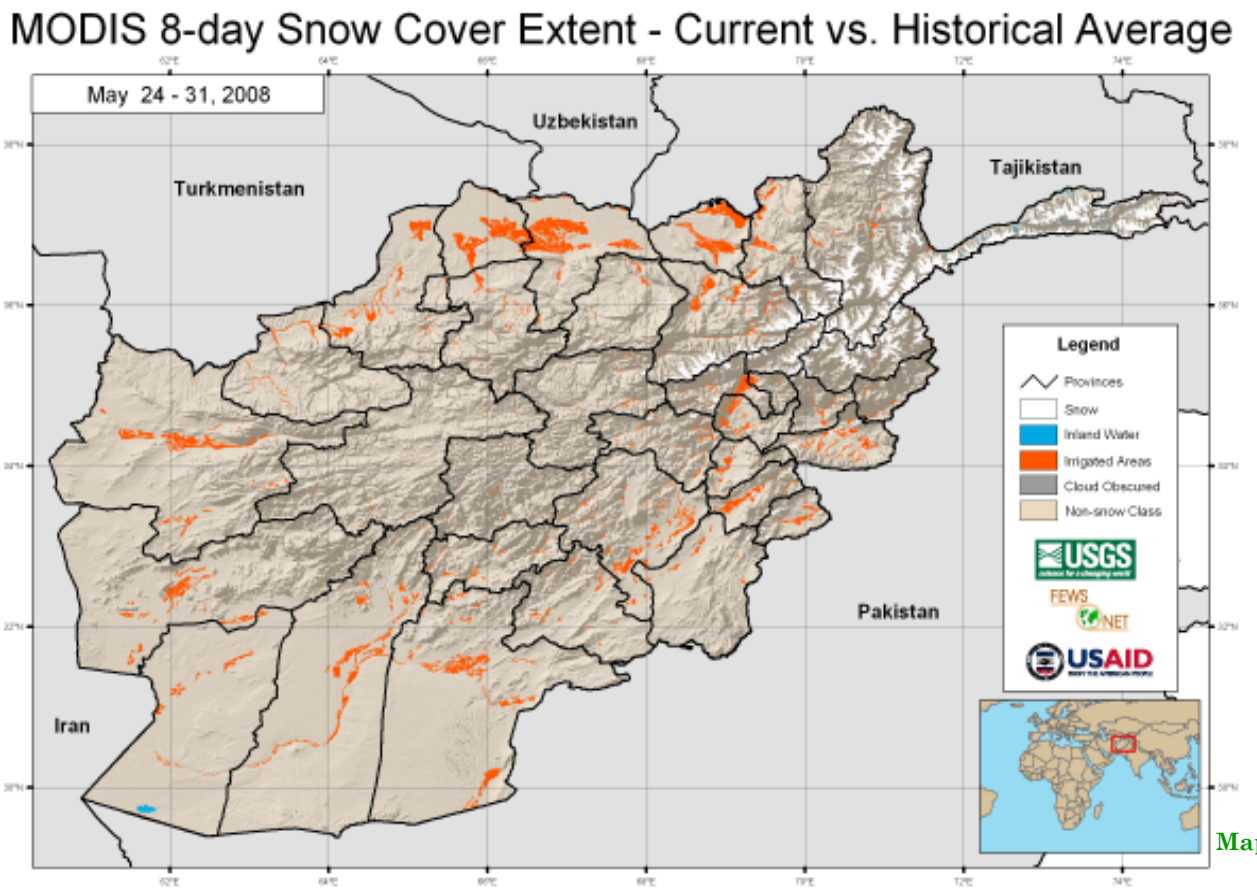


Map (7)

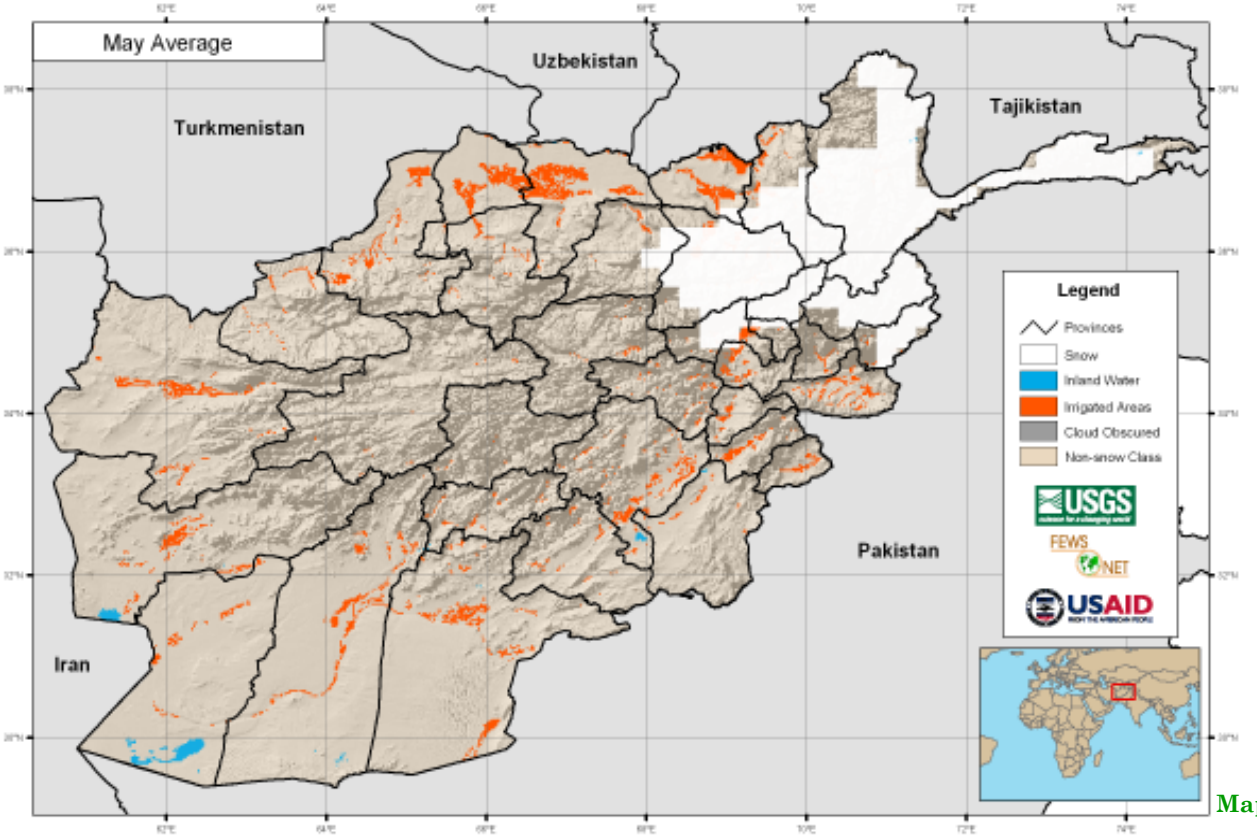


Map (8)

Snowfall occurrence 2007-2008:



Map (9)



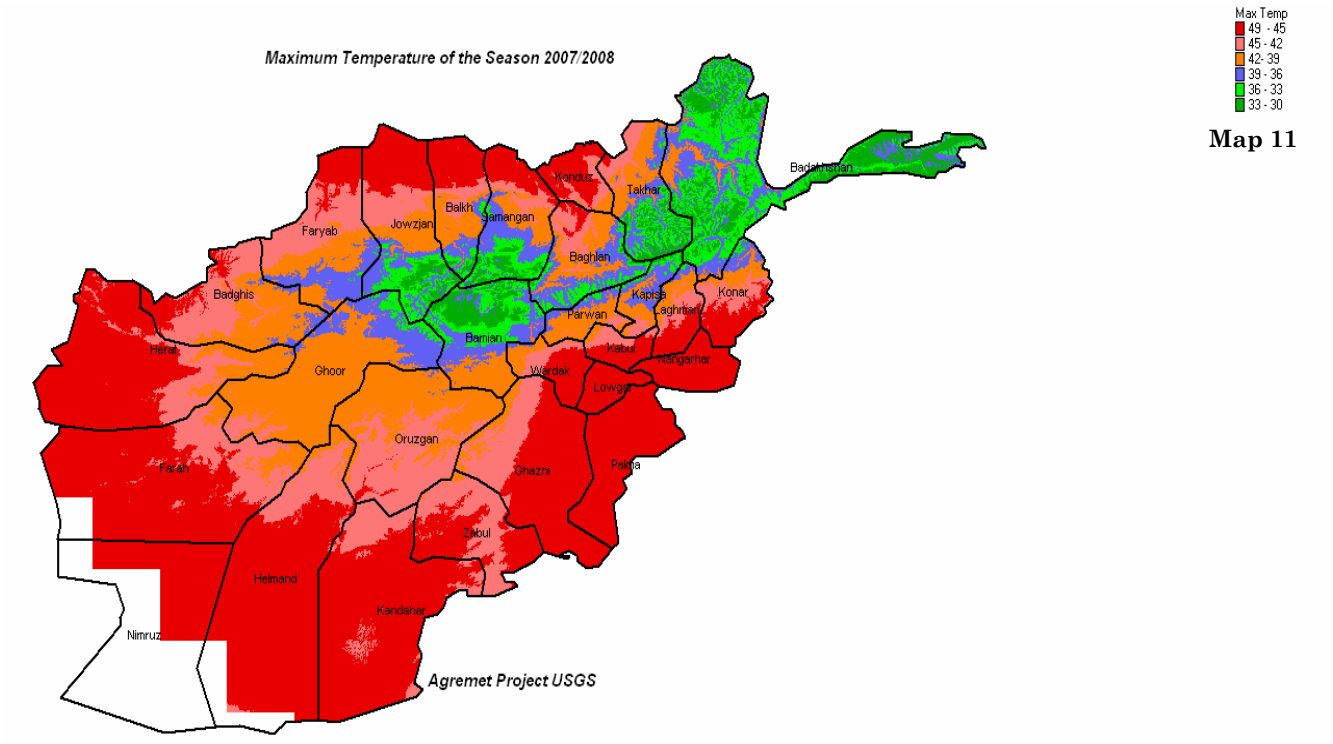
Map (10)

Temperature and its effect

In generally temperature for the growing season (2007 – 2008) was higher compared to the last season (2006 – 2008) across the country. During January in to February 2008 temperature drop down below normal and bitter cold weather resulted in human fatalities and killed livestock, the unusually cold weather eased it become warmer than normal and begun melting the snow pack early than normal. The country experienced below normal precipitation during the growing season 2007 – 2008 and above normal temperatures has aggravated this situation, melting snow early, evaporating more water than normal, and depleting underground water sources.

The cumulative effect of this situation had a direct bearing on most households, who rely on agriculture and livestock for their income and food needs.

As map(11) shows the southwestern, some parts of the Western region, Southern and Eastern regions experienced extern hot weather during the growing season (2007 – 2008). The maximum temperate recorded 49.3 ° C in Farah province (Southwest) during the growing season (2007 – 2008).

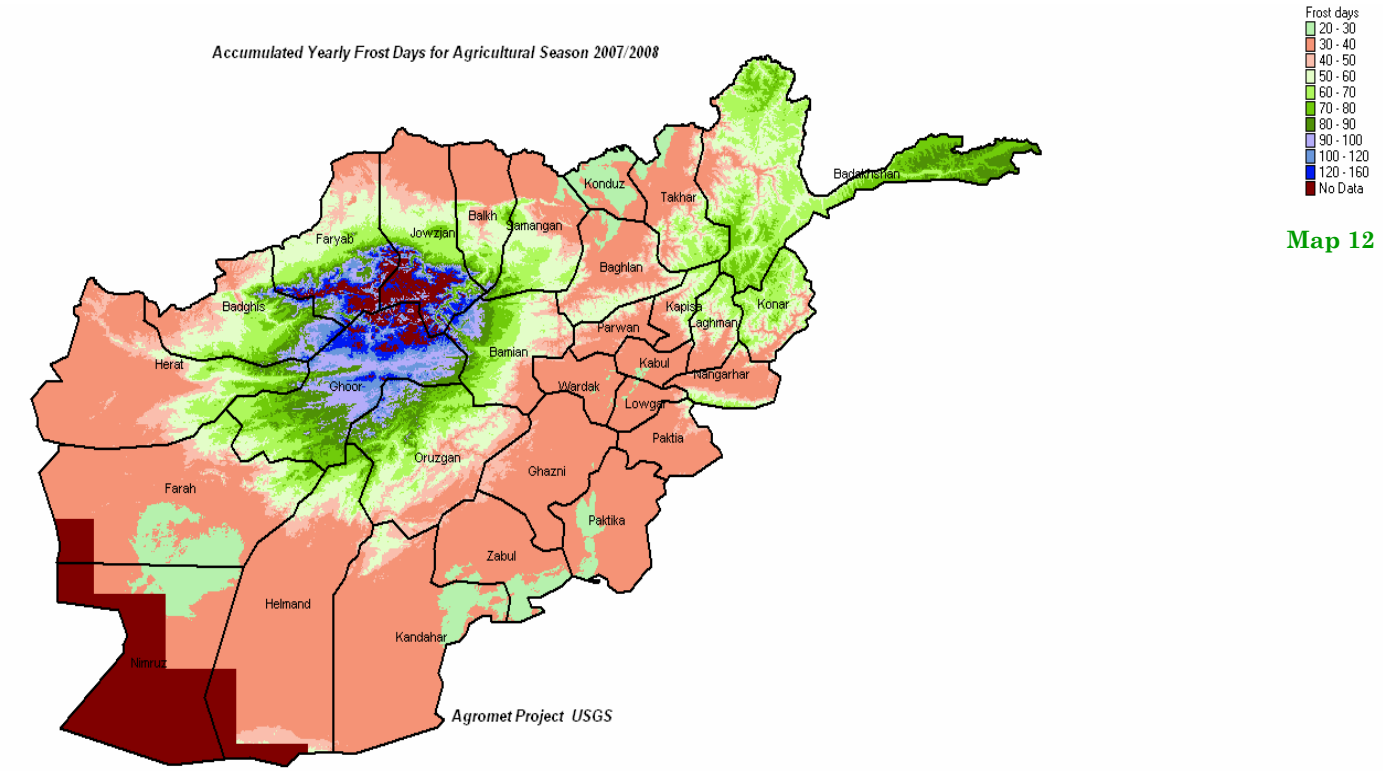


Map 11

Frost Days recorded

Based of temperature recorded data the frost days was higher during the growing season 2007 – 2008 compared to last season 2006 – 2007 across the country. As Map (12) shows the Northwestern region, Central Highlands, some parts of the Capital regions, Northeastern regions experienced most frost days compared to other regions.

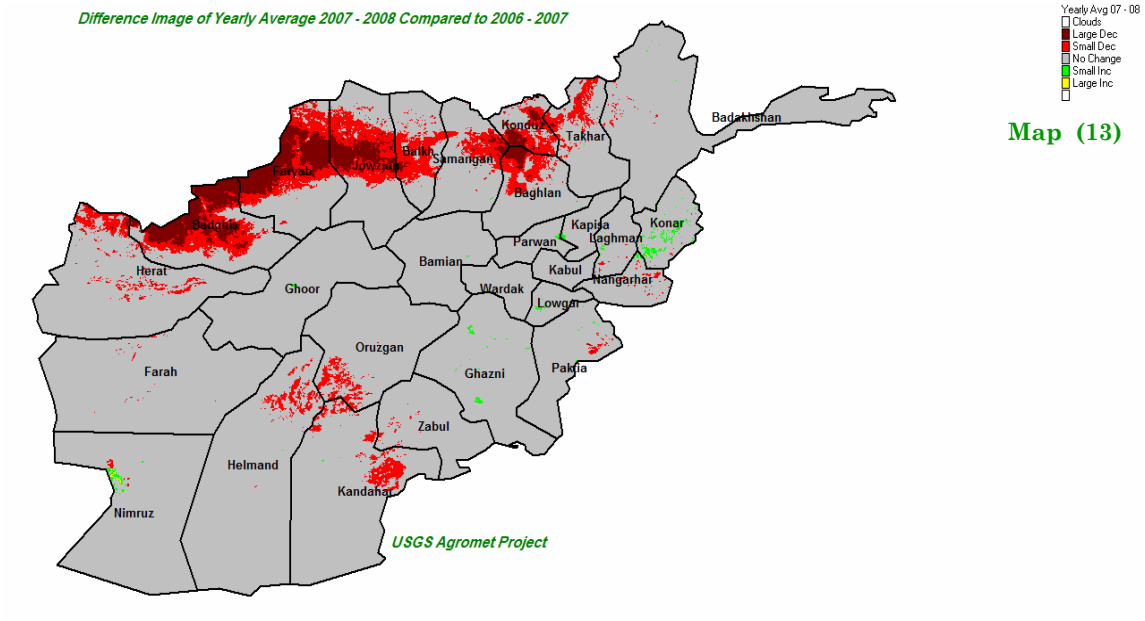
The maximum first days recorded 152 frost days in Logar province (Capital region) and 151 frost days has been recorded in Bamyan province (Central Highlands) and the minimum frost days was 5 frost days in Jalalabad (Eastern).



Map 12

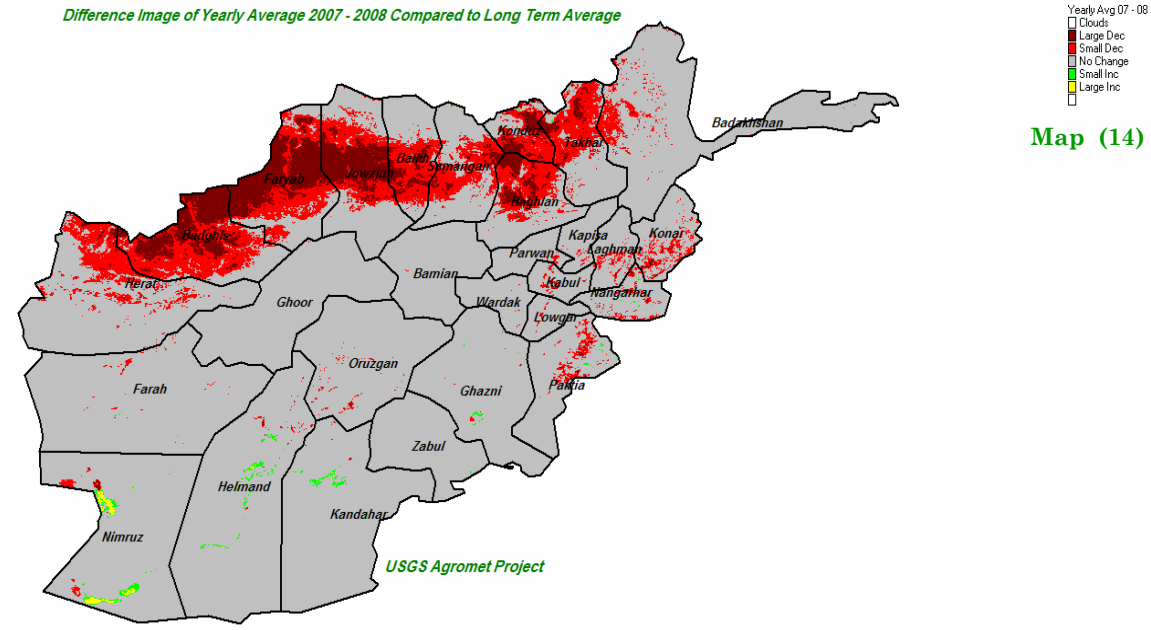
Greenery of the year (2007-2008)

Comparison of yearly average of NDVI for the agricultural season (2007 - 2008) with the yearly average of NDVI for the season (2006 - 2008) map (13) shows large decrease of NDVI in the Northwestern and Northern regions during the agricultural season (2007 - 2008) compared to the last season (2006 - 2007) , and small decrease occurred in NDVI vale in limited area in the Southern region. There is no change in NDVI vale in the remaining regions of the country during the agricultural season (2007 - 2008) over the last agricultural season (2007 - 2008).



Map (13)

Comparison of yearly average of NDVI for the agricultural season (2007 - 2008) with long term average of NDVI Map (14) shows large decrease of NDVI in the Northwestern region, Northern and some parts of the Northeastern regions during the agricultural season (2007 - 2008) compared to the long term average of NDVI , and small decrease occurred in NDVI vale in as separated in limited area in the Eastern region. There is no change in NDVI value in most parts of the country during the agricultural season (2007 - 2008) compared to long term average of NDVI.



Map (14)